

ABSTRACT OF THE DISCLOSURE

Method and system for providing an excimer or molecular fluorine laser including a laser tube filled with a laser gas surrounded by an optical resonator, where the laser tube has multiple electrodes including a pair of main discharge electrodes connected to a discharge circuit for exciting the laser gas to produce a laser output beam. The discharge circuit has an all solid state switch and preferably does not include a transformer. The solid state switch includes multiple solid state devices that may be capable of switching voltages in excess of 12 kV, such as 14-32 kV or more, or the voltage needed to switch the laser. The series of switches has a rise time of approximately less than 300 ns, and preferably around 100 ns or less. The switch may be capable of switching voltages of slightly more than half, but less than the entire voltage needed to produce laser pulses of desired energies, and a voltage doubling circuit may be used to produce the voltage required to produce the desired output pulse energies. An oscillator-amplifier configuration may be used, wherein an oscillator switch may be capable of switching voltages less than the entire voltage needed to produce the desired laser pulse energies, while the amplifier amplifies the pulses to the desired pulse energies.

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